# XV. Oceanography - Government

*Section XV outlines plans for United States Antarctic Program sponsored oceanographic expeditions during the 2004-2005 season.*

## R/V Nathaniel B. Palmer

The *R/V Nathaniel B. Palmer* first arrived in the Antarctic Peninsula area in April 1992 and is now in the fourth year of its second long-term charter to the United States Antarctic Program. The vessel is owned by Edison Chouest Offshore and is of United States Registry. The *R/V Nathaniel B. Palmer* is ice-class ABS A2 (capable of breaking 3 feet of ice at 3 Knots), is 93.9 meters long, has a beam of 18.3 meters, a design draught of 6.9 meters, and displaces 6800 long tons. The vessel has 13,000 shaft horsepower driving two controllable pitch propellers and is also equipped with both bow and stern thrusters. The vessel is a multidisciplinary research platform, has a crew of 26 and accommodation for 41 scientists and RPSC support staff. It is designed for year-round operations in Polar Regions.

### Research Capabilities

The vessel is equipped with a Seapath GPS and inertial navigation system, a P-Code GPS satellite navigation system, fish-finding sonar, sub-bottom profiling sonars, a Simrad multi-beam swath bathymetry system, INMARSAT and Iridium voice and data communications, TeraScan satellite imaging system, and HF and VHF transceivers. The vessel is also equipped with a DP0(zero)-rated dynamic positioning system. Two deep-sea trawl and coring winches and two hydrographic winches are operated through stern and starboard A-frames, respectively. An additional hydrographic winch, equipped with electromechanical cable, leads through a baltic-room arrangement that protects it from the weather. The vessel is also equipped with multi-channel seismic capability and laboratory space totaling approximately 520 square meters, all located contiguously on

the main deck. The vessel also has a suite of portable lab vans. Zodiac inflatable boats are available for ship-to-shore transport and sample collection.

**Ship's Master:** Captain Mike Watson

### Scientific Programs in the Antarctic Treaty Area

The *R/V Nathaniel B. Palmer* will conduct cruises in the Southern Ocean surrounding Antarctica; both a north and southbound research transect between Punta Arenas, Chile and San Diego, California. In early 2005, a group of USAP grantees will sail on the first NBP cruise to collect sediment cores via a shipboard drill rig mounted over the vessel's moon pool. Scientific research conducted onboard includes the following disciplines: Marine Biology, Marine Geology and Geophysics, and Physical and Chemical Oceanography.

### Intended Tracks and Schedule

The vessel is scheduled for work in the Antarctic polar regions as well as in the mid-latitudes of the Pacific Ocean during the 2004-2005 season, including the Pacific and Southern Oceans and Ross Sea. Ports of call include: Lyttelton, New Zealand; McMurdo Station, Antarctica; Punta Arenas, Chile, and San Diego, California. The NBP will sail in support of approximately six science cruises during the 2004-2005 season.

## *R/V Laurence M. Gould*

The *R/V Laurence M. Gould* first arrived in the Antarctic Peninsula in January 1998. The vessel is owned by Edison Chouest Offshore and is of United States Registry. The vessel is on long-term charter to support the United States Antarctic Program. The *R/V Laurence M. Gould* is ice-class ABS A1 (capable of breaking 1 foot of ice at continuous forward motion), is 70.1 meters long, has a beam of 14.02 meters, a design draught of 5.48 meters and displaces 3780 long tons. The vessel has 4,575 shaft horsepower driving two controllable pitch propellers and is also equipped with a bow thruster. The vessel is a multidisciplinary research platform with a crew of 16 and accommodation for 28 scientists and RPSC staff. It is designed for year-round operations in polar regions.

## Research Capabilities

The vessel is equipped with a P-Code GPS satellite precision navigation system, fish-finding sonar, sub-bottom profiling sonar, INMARSAT and Iridium voice and data communications and HF and VHF transceivers. A deep-sea trawl winch and two hydrographic winches are to be operated through either a stern or starboard side A-frame. One hydrographic winch, equipped with electromechanical cable, leads through a baltic-room arrangement that protects it from the weather. Various over-the-side sampling equipment will be handled through use of an articulated Hiab crane on the ship's fantail. In addition, the vessel is equipped with laboratories totaling 99 square meters and an additional 27 square meters in portable laboratory vans. A 22-foot aluminum landing craft and Zodiacs inflatable boats are available for ship-to-shore transport and sample collection.

**Ship's Master:** Captain Mike Terminel

## Scientific Programs in the Antarctic Treaty Area

The *R/V Laurence M. Gould* will conduct cruises in the Antarctic Peninsula area of the Southern Ocean and Drake Passage. Research projects supported during the 2004-2005 season will include Marine Biology, Chemical and Physical Oceanography, and Marine Geology and Geophysics. The *R/V Laurence M. Gould* will also provide logistics support to transport scientists, cargo, and personnel to and from Palmer Station from its primary port of Punta Arenas, Chile.

## Intended Tracks and Schedule

The *R/V Laurence M. Gould* will provide transport as described above and provide oceanographic and field camp research support in and around the Bransfield Strait area of the Antarctic Peninsula. Ports of call include: Punta Arenas, Chile; Palmer Station, Antarctica; and San Diego, California. The vessel will sail in support of eight science cruises, two peninsula research field camp openings and Palmer Station staff and resupply shuttles in the Antarctic Peninsula area during the 2004-2005 season. In addition, the LMG will sail to San Diego, California in July of 2005 to transport hazardous waste from Palmer Station.